

**(19) World Intellectual Property
Organization
International Bureau**



(43) International Publication Date
30 September 2004 (30.09.2004)

PCT

(10) International Publication Number
WO 2004/083839 A1

(51) International Patent Classification⁷: G01N 27/00

c/o Università Degli Studi di Brescia, Piazza Mercato, 15,
I-25100 Brescia.

(21) International Application Number:
PCT/TB2004/000748

(74) **Agent:** VALENTINI, Giuliano; Marietti, Gislone e Trupiano S.r.l., Via Larga, 16, I-20122 Milan (IT).

(22) International Filing Date: 16 March 2004 (16.03.2004)

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: Italian

(26) Publication Language: English

(30) Priority Data:
MI2003A000514 18 March 2003 (18.03.2003) IT

(71) Applicant (for all designated States except US): UNIVER-SITA' DEGLI STUDI DI BRESCIA [IT/IT]; Piazza Mer-cato, 15, I-25100 Brescia (IT).

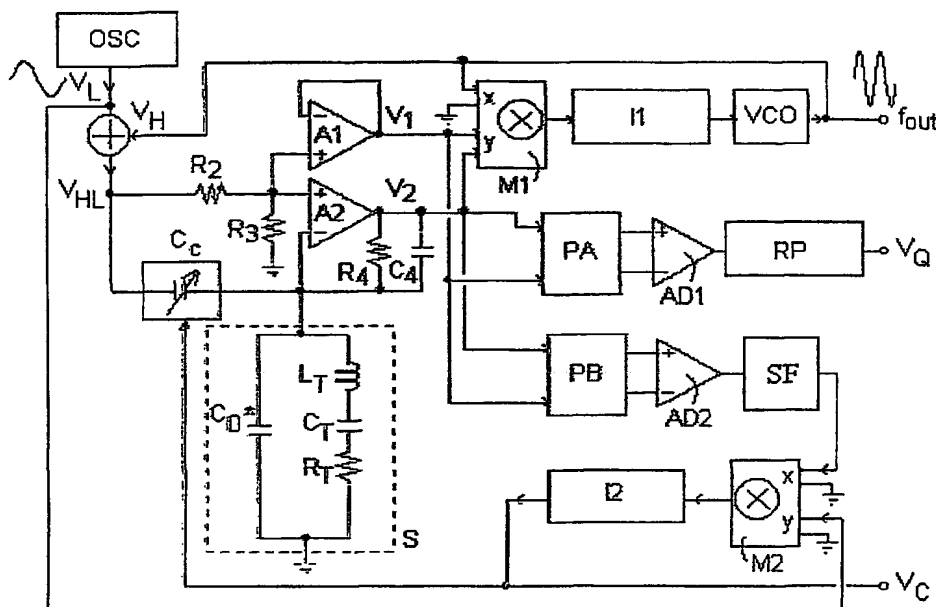
(72) Inventors; and

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,

(75) Inventors/Applicants (for US only): FERRARI, Vittorio [IT/IT]; c/o Università Degli Studi di Brescia, Piazza Mercato, 15, I-25100 Brescia (IT). **MARIOLI, Daniele** [IT/IT]; c/o Università Degli Studi di Brescia, Piazza Mercato, 15, I-25100 Brescia (IT). **TARONI, Andrea** [IT/IT];

[Continued on next page]

(54) Title: METHOD AND DEVICE FOR DETERMINING THE RESONANT FREQUENCY OF RESONANT PIEZOELECTRIC SENSORS



(57) Abstract: A method and a device are disclosed to determine the value of the resonant frequency of a resonant sensor subject to an acoustomechanical and/or dielectric load. The sensor is simultaneously and constantly excited at two different frequencies, the first of which is the series resonant frequency, while the second is introduced to detect and compensate the sensor parallel capacitance in an automatic and continuous way.

WO 2004/083839 A1



TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*